

## REMARKS

This is a Response to the Office Action mailed June 22, 2006, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire September 22, 2006. Claims 6-7 were canceled by the applicant in his December 20, 2005 response to the Office Action of September 20, 2005. Claims 1, 3, 4, and 5 are currently amended. New claims 8 and 9 have been added. No new matter has been added to the application. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Upon entry of the amendments herewith, claims 1-5 and claims 8-9 remain pending.

### 1. Objections to the Claims

On page 2 of the Office Action, claims 1-5 were objected to because of informalities. The Examiner will recognize that the objected phrase has been removed from claim 1 and is now presented in new dependent claim 8 in a form suggested by the Examiner. In view of the amendments to claims 3 and 4, it is respectfully submitted that this objection is rendered moot with regards to claims 3 and 4. Accordingly, the applicant respectfully requests withdrawal of the informality objection to claims 1-5.

### 2. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, at page 3, claims 1-3 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Horimai* (U.S. Patent Publication 2003/0063342), hereinafter *Horimai*, in view of *Amble* (U.S. Patent Publication 2004/0001400), hereinafter *Amble*. Claims 4-5 stand rejected over *Horimai* in view of *Amble* and in further view of *Kono* (Japanese Patent Publication JP 2001-291242), hereinafter *Kono*.

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all

elements/features/steps of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

Although the applicant successfully traverses the rejection of claims 1 and 3 over the cited prior art, he has nonetheless chosen to amend independent claims 1 and 3 with a limitation clearly not found in the prior art, so as to facilitate prosecution. Further, the applicant has chosen to amend independent claim 4 to further distinguish claim 4 over the cited references and has submitted remarks in support of allowance below. The discussion of said limitations follows.

A. Claims 1 and 3

The applicant respectfully submits that claims 1 and 3, as amended, are allowable for at least the reason that the proposed combination of *Horimai* in view of *Amble* does not disclose, teach, or suggest the feature of “different optical paths” as recited in the amended claims. It is further submitted that the addition of *Kono* does not render the “different optical paths” limitation obvious.

i. *Horimai*’s signal and servo beams travel on the same optical path

*Horimai*’s Figure 1 shows that, while the focal points for the signal beam and the servo beam are different, both the signal beam and the servo beam travel along the same optical path, perpendicular to the medium (1, Figure 1). E.g., *Horimai*’s invention is quickly distinguished because it comprises only one light source, and therefore, the optical signal path of *Horimai*’s signal and servo beams will be necessarily identical.

This is not at all like amended claims 1 and 3 of the present application, which recite, *inter alia*, “the signal beam is projected along a first optical path and the reference beam and the light beam for servo control are projected along a second optical path different than the first optical path.” See, e.g., FIG. 1 of the present application, showing a non-limiting embodiment where reference beam 104 and servo beam 105 follow a different optical path than signal beam 103.

ii. Amble propagates beams on a common optical path

*Amble* does not disclose, teach, or suggest “the signal beam is projected along a first optical path and the reference beam and the light beam for servo control are projected along a second optical path different than the first optical path” as recited in amended claims 1 and 3 of the present application. *Amble*’s invention comprises two light sources, but *Amble* makes no provision for different optical paths. Unlike the different optical paths recited in amended claims 1 and 3, *Amble* directly shows and describes both signal and servo beams on a common optical path.

*Amble*’s FIG 1, shows an optical storage medium oriented vertically; where a recording data plane 18 is to the left, and a servo plane 34 is to the right. It is evident from FIG 1 that the R/W beam 12 is focused on R/W focus spot 16 and servo beam 24 is focused on servo focus spot 32 [0054]. *E.g.*, the signal and servo beams travel along the same optical path, but are focused at different depths in the optical recording medium. The common optical path in *Amble* is further described where *Amble* focuses servo beam 24 with lens 30 through objective lens 14 to focus servo beam 24 to a servo focus spot 32 on a servo or guide plane 34 [0053], and focuses the R/W beam 12 through objective lens 14 which focuses beam 12 to a R/W focus spot 16 [0056].

Unlike the recitations in amended claims 1 and 3, *Amble* does not disclose, teach, or suggest a signal beam and a servo beam on different optical paths. Instead, *Amble*’s invention is directed toward a system that implements a multiple-stage servo sub-system capable of focusing a servo beam at different depths in the optical storage medium. There is no motivation for one skilled in the art to view *Amble*’s invention and then create a system where “the signal beam is projected along a first optical path and the reference beam and the light beam for servo control are projected along a second optical path different than the first optical path.” Accordingly, amended claims 1 and 3 are allowable.

iii. Kono does not discuss or suggest different optical paths

The addition of *Kono* fails to cure the deficiencies of *Horimai* and *Amble*. *Kono*’s invention describes two light sources, “light wave 2” and “signal light 1,” but *Kono* is concerned

with combining polarized beams in order to dynamically cancel noise “due to external light or the noise caused by an optical recording medium.” There is no disclosure, teaching, suggestion, or motivation from *Kono* to project signal light 1 (a signal beam) along one optical path and light wave 2 (a reference beam and servo beam) along a different optical path. Accordingly, amended claims 1 and 3 are not obvious in light of the additional reference, *Kono*, and the applicant respectfully submits that claims 1 and 3 are allowable.

**B. Claims 4 and 5**

The applicant respectfully submits that independent claim 4, as amended, and dependent claim 5 are allowable for at least the reason that the proposed combination of *Horimai* in view of *Amble* and in further view of *Kono* does not disclose, teach, or suggest the feature of “a recording layer in which data and a test pattern for obtaining noise information due to an optical modulation pattern are to be recorded” and “removing noise components due to the optical modulation pattern from the thus reproduced image.” As pointed out in the Office Action, *Horimai* in view of *Amble* do not disclose “the removal of noise incurred due to the passage of light through the optical modulation pattern, wherein a predetermined test pattern is recorded, it is then reproduced and its noise ‘signature’ is subsequently removed from noisy image reproductions.” The applicant submits that the cited prior art, *Kono*, also fails to teach this feature.

The *Kono* reference does discuss noise cancellation, but *Kono* performs his cancellation in an entirely different manner than recited in claims 4 and 5. As described in the abstract of *Kono*, a light wave for cancellation and a signal light are combined to prepare a new “light wave 3.” This new light wave 3 is used as the *signal* light for recording data in the medium. Next, in *Kono*, a reproducing light with the same wave front as that of the new light wave 3 is used during reproduction, and the polarization components of the reproducing light orthogonally across each other are separated. It is this *dynamic* process of combing polarized components in *Kono* that cancels noise. *E.g.*, *Kono* does not write a “test pattern” into his medium.

In contrast to *Kono*, one or more disclosed embodiments of the present application records a “test pattern for obtaining noise information” and then uses the test pattern to create a reference noise component so as to remove “noise components due to the optical modulation pattern.” Accordingly, because the addition of *Kono* to the *Horimai* and *Amble* references does not disclose, teach, or suggest the features of “a test pattern for obtaining noise information” and “removing noise components due to the optical modulation pattern from the thus reproduced image,” independent claim 4 and dependent claim 5 are allowable.

C. Claims 8 and 9

i. Claim 8

The Examiner will recognize that dependent claim 8 contains an element formerly submitted in independent claims 1, 3, and 4. In light of the amendments made to claim 1, which now render claim 1 allowable, dependent claim 8 is also allowable based on at least the same reasons.

ii. Claim 9

Claim 9 recites, *inter alia*, “a holographic recording medium comprising a recording layer in which a test pattern for obtaining noise information is recorded” and a method that includes: 1) “reproducing the test pattern to obtain noise information due to an optical modulation pattern,” 2) “calculating a difference between the noise information and the reproduced image,” and 3) “removing noise components from the thus reproduced image.” As discussed previously, neither *Horimai* nor *Amble* contemplate the removal of noise caused by the optical modulation pattern. Further, because *Kono* uses a dynamic polarization technique for noise cancellation, the addition of *Kono* does not cure the deficiency. Therefore, the cited prior art fails to disclose, teach, or suggest the limitations of claim 9, and thus, claim 9 is allowable.

3. Obviousness-Type Double Patenting Rejections

The Office Action has rejected claims 1-3 under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 1-2 of co-pending U.S. Patent Application Serial No. 10/827,152, in view of *Amble*.

In light of the amendments made to claims 1 and 3 of the present application and the arguments above, the double patenting rejection is rendered moot, and the applicant requests that the provisional rejection be withdrawn. Moreover, it is noted that U.S. Patent Application Serial No. 10/827,152 has not yet been allowed/issued. Accordingly, the present application should be allowed to issue, and a double patenting rejection (if appropriate) should instead be applied to U.S. Patent Application Serial No. 10/827,152. If the status of U.S. Patent Application Serial No. 10/827,152 should change (e.g., get allowed) while the Examiner is reviewing this present amendment, the Examiner is kindly requested to telephone the undersigned attorney to discuss filing of a terminal disclaimer, if doing so will expedite the allowance of the present application.

**The applicant notes that U.S. Patent Application Serial No. 10/827,152 (corresponding to U.S. Patent Publication No. 20040212859) has been cited by the Examiner as grounds for rejection in the present application, but has not been listed on any form PTO-892 (Notice of References Cited). The Examiner is kindly asked to list this reference on a form PTO-892 in a next communication.**

4. Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Further, in light of the amendments and remarks, the applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that pending claims 1-5 and 8-9 are in condition for allowance. The applicant, therefore, respectfully requests that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. de Guzman by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the

claims, he is further encouraged to contact Mr. de Guzman by telephone to expediently correct such informalities.

Respectfully submitted,  
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